

Diagnostic Imaging Department

My X-ray Examination

What you need to know about radiation.....

The purpose of this leaflet is to explain the potential risks of having an X-ray examination. This includes CT scans but it does not apply to ultrasound scans and MRI scans

Why am I having an X-ray?

Your healthcare team will have requested an X-ray or CT scan:

- To help find out what is wrong with you
- To check on progress of an illness or injury
- To help carry out an internal procedure as part of your treatment
- To provide your doctor with other clinical information

Your healthcare team have recommended that an X-ray examination will be of benefit to you, and the request has been checked by specially trained staff to make sure it is the right one for you and your condition. When deciding on whether an X-ray examination is required (and what type), the healthcare professionals involved always check that the benefit of having the test is greater than the risk.

X-ray examinations use a beam of electromagnetic radiation to see inside your body. The radiation does not stay inside you or make you radioactive. It is the same radiation as light and radio waves, but has a higher energy and is capable of causing a process known as ionisation.

Are there any risks in using ionising radiation?

Ionising radiation can cause cell damage that may, after many years or decades turn cancerous.

We are all at risk of developing cancer during our lifetime. The normal risk is that this will happen to about 50% of people at some point in their life (1 in 2). We are also all exposed to background radiation every day. The table below tells you how much radiation you are likely to get from different types of X-ray examinations, compared to other every day activities, and how this may affect your cancer risk.

Further risk comparisons can be found at: <https://www.gov.uk/government/publications/ionising-radiation-dose-comparisons/ionising-radiation-dose-comparisons>

| Diagnostic procedure | Background equivalent | Risk of fatal cancer |
|---|------------------------------|-----------------------------|
| Eating a banana | 20 mins | 1 in a few million |
| Hand or feet x-ray | < 1 day | 1 in a few million |
| Dental x-ray | 1 day | 1 in a million |
| Chest x-ray | 3 days | 1 in a 800,000 |
| Flight to Hong Kong | 1 week | 1 in 670,000 |
| Pelvis x-ray | 1½ month | 1 in 63,000 |
| Mammography | 2 months | 1 in 50,000 |
| Abdomen x-ray | 2½ months | 1 in 40,000 |
| Lumbar spine x-ray | 3 months | 1 in 30,000 |
| CT Head | 8 months | 1 in 10,000 |
| Barium swallow | 8 months | 1 in 10,000 |
| Dorset annual natural background radiation | 1 year | 1 in 10,000 |
| CT Chest/abdomen/pelvis | 4½ years | 1 in 2000 |

What if I may be pregnant?

Exposure of an unborn baby to ionising radiation may cause a slight increase in their cancer risk. For this reason X-ray examinations of the abdomen or pelvic area are usually avoided when pregnancy is possible or confirmed, unless the risk of not performing the test is greater. You must tell you healthcare team if there is any possibility of being pregnant.

X-rays of parts of the body well away from the abdomen such as limbs (arms and legs) and dental X-rays do not give any increased risk to an unborn baby.

What about children?

Long term effects from ionising radiation can take many years to come about. The risk of long term effects is increased slightly in younger people because they have more time left for them to develop. The healthcare team take account of this when deciding if a child needs an X-ray examination, and the amount of radiation used is kept as low as possible.

What if I don't have the examination?

The risk of not having an examination is that it may not be possible to find out what is wrong with you, or how best to treat you. You should discuss any concerns you may have with your healthcare team.

What if I have more questions?

Please talk to your healthcare team or any of the team carrying out your X-ray examination if you would like to discuss any of this information further.